



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,349	10/30/2001	Gregory V. Hofer	100110429-1	4967

22879 7590 11/17/2004

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

VIEAUX, GARY

ART UNIT	PAPER NUMBER
----------	--------------

2612

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/002,349

**Applicant(s)**

HOER ET AL.

**Examiner**

Gary C. Vieaux

**Art Unit**

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 14 is/are allowed.  
6) ☒ Claim(s) 1-13, 15 and 18-23 is/are rejected.  
7) ☐ Claim(s) 16 and 17 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10/30/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/12/2002.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Claim Objections***

**Claims 17 and 19-22** are objected to under 37 CFR 1.75(c), as being of  
5 improper dependent form for failing to further limit the subject matter of a  
previous claim. Applicant is required to cancel the claim(s), or amend the  
claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in  
independent form.

Claim 17 improperly references dependency on claim 18. Based on the  
10 language of the adjacent claims, claim 17 will be examined for patentability with a  
presumed dependency on claim 16, not claim 18 as recited.

Claims 19 and 20 improperly references dependency on claim 20. Based  
on the language of the adjacent claims, claims 19 and 20 will be examined for  
patentability with a presumed dependency on claim 18, not claim 20 as recited.

15 Claims 21 and 22 improperly references dependency on claim 22. Based  
on the language of the adjacent claims, claims 21 and 22 will be examined for  
patentability with a presumed dependency on claim 20, not claim 22 as recited.

**Claims 8-10, 16 and 19-22** are objected to because of the following  
20 informalities:

Claims 8, 19 and 20 recites the limitation "frequency of the artificial  
illumination" in lines 1-2 of each claim, respectively. There is insufficient

Art Unit: 2612

antecedent basis for this limitation in the claim. These claims will be examined on their merits as best interpreted by the examiner.

Claim 16 recites lack of matching plurality in line 10, where the claim states "at least two exposure."

5        Claims 9, 10, 21 and 22 recite the limitation "periodic changes" in line 1 of claim 10, in line 2 of claim 11, in line 1 of claim 21 and in line 2 of claim 22, respectively. There is insufficient antecedent basis for this limitation in the claim. These claims will be examined on their merits as best interpreted by the examiner.

10        Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

15        (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20

**Claims 1-12 and 18-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto (US #6,130,417) in view of Munson et al. (US #6,295,085.)

25        Regarding claim 1, Hashimoto is found to teach a method to eliminate the effects of flicker which includes setting an exposure length equal to an integer multiple of a period of the AC current typically used at the scene location (col. 8

Art Unit: 2612

lines 59-65, in which shutter speed can be read as being set equal to 1/50 during synchronization.) Hashimoto further teaches employing flicker elimination during hill-climbing auto-focusing which includes taking a first exposure with a lens in a first position, moving the lens to a second position, taking a second exposure,  
5 and determining which lens position has a better focus measure (Fig. 2A; col. 6 lines 3-36.) However, Hashimoto is not found to teach determining a scene location.

Nevertheless, Munson is found to teach determining a scene location, in order to correct the effects of flicker generated by fluorescent lighting through first  
10 establishing the frequency of the AC power typically used at that location (col. 2 lines 9-20.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine determination of a scene location to further determine the AC power frequency at that location as taught by Munson, with the method of auto-focusing in which an exposure length is associated with  
15 an AC power as taught by Hashimoto. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teaching in order to create a method of auto-focus which eliminates flicker related to fluorescent lighting during focusing operations, and which is adjustable for use based on the particular AC power source at that location (e.g. 50 Hz or 60 Hz.)

20 Regarding claim 2, Hashimoto and Munson teach all the limitations of claim 2 (see the 103(a) rejection to claim 1 supra) including teaching where a scene location is determined by user input ('085 col. 2 lines 9-20.)

Regarding claim 3, Hashimoto and Munson teach all the limitations of claim 3 (see the 103(a) rejection to claim 1 supra) including teaching where the scene location is determined by a GPS device ('085 col. 2 lines 21-25.)

Regarding claim 4, Hashimoto is found to teach a method to eliminate the effects of flicker which includes synchronizing an exposure rate to the frequency of the AC current typically used at the scene location (col. 8 lines 59-65, in which the occurrence of shutter activity can be read as occurring in synchronization with a frequency of the AC current.) Hashimoto further teaches employing flicker elimination during hill-climbing auto-focusing which includes taking a first exposure with a lens in a first position, moving the lens to a second position, taking a second exposure, and determining which lens position has a better focus measure (Fig. 2A; col. 6 lines 3-36.) However, Hashimoto is not found to teach determining a scene location.

Nevertheless, Munson is found to teach determining a scene location, in order to correct the effects of flicker generated by fluorescent lighting through first establishing the frequency of the AC power typically used at that location (col. 2 lines 9-20.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine determination of a scene location to further determine the AC power frequency at that location as taught by Munson, with the method of auto-focusing in which the occurrence of shutter activity is synchronized with the AC power frequency as taught by Hashimoto. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teaching in order to create a method of auto-focus which

Art Unit: 2612

eliminates flicker related to fluorescent lighting during focusing operations, and which is adjustable for use based on the particular AC power source at that location (e.g. 50 Hz or 60 Hz.)

5        Regarding claim 5, Hashimoto and Munson teach all the limitations of claim 5 (see the 103(a) rejection to claim 1 supra) including teaching where a scene location is determined by user input ('085 col. 2 lines 9-20.)

Regarding claim 6, Hashimoto and Munson teach all the limitations of claim 6 (see the 103(a) rejection to claim 1 supra) including teaching where the scene location is determined by a GPS device ('085 col. 2 lines 21-25.)

10        Regarding claim 7, Hashimoto teaches hill-climbing auto-focusing that determines which lens position has a better focus measure by taking a first exposure with a lens in a first position, moving the lens to a second position and taking a second exposure (Fig. 2A; col. 6 lines 3-36.) Hashimoto further teaches these exposures being synchronized with the frequency of intensity variations in  
15    the scene (col. 8 lines 59-62) in order to eliminate the influence of flicker during focusing (col. 8 lines 47-49.) However, Hashimoto does not teach determining a presence of artificial illumination or a frequency of intensity variations in the scene.

      Nevertheless, Munson is found to teach determining a presence of  
20    artificial illumination in the scene, as well as determining of a frequency of intensity variations in the scene (col. 6 lines 1-7.) It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate detection of the presence and the associated frequency of intensity variations of artificial

Art Unit: 2612

illumination as taught by Munson, with the auto-focusing method as taught by Hashimoto. One of ordinary skill in the art at the time of invention would be motivated to make this combination in order to correctly eliminate the influence of flicker, and thereby prevent erroneous auto-focus operation.

- 5        Regarding claim 8, Hashimoto and Munson teach all the limitations of claim 8 (see the 103(a) rejection to claim 7 supra) including providing a teaching in which the presence and frequency of the artificial illumination is determined by user input.

- 10        Munson teaches detection of presence and frequency of the artificial illumination (col. 4 lines 41-57; col. 6 lines 5-7), in addition to information relating to artificial illumination being input by a user (col. 2 lines 9-20.) Official Notice is taken that the frequency of artificial illumination is calculated as being twice the frequency of the power source; a concept which is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time
- 15        the invention was made to derive the frequency of the artificial illumination from the frequency of the power source at the location for use in suppressing the effects of flicker. In light of these teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the presence and frequency of the artificial illumination from the user input of location
- 20        information, as a way to reduce processing or as a way to eliminate the need for flicker detection.

Regarding claim 9, Hashimoto and Munson teach all the limitations of claim 9 (see the 103(a) rejection to claim 7 supra) including teaching where the

Art Unit: 2612

presence and frequency of the artificial illumination is determined by measuring the light from the scene for periodic variations ('085 col. 4 line 58 – col. 5 line 5, in which presence is determined via pulses detected from the measured light; '085 col. 5 lines 58-67, in which frequency is determined via pulses from the  
5 measured light.)

Regarding claim 10, Hashimoto and Munson teach all the limitations of claim 10 (see the 103(a) rejection to claim 9 supra) including where the periodic changes are variations in brightness ('085 col. 4 line 58 – col. 5 line 5, where the level of light is equated with brightness.)

10 Regarding claim 11, Hashimoto and Munson teach all the limitations of claim 11 (see the 103(a) rejection to claim 9 supra) including teaching where the light from the scene is focused onto a photo sensor ('085 col. 3 lines 61-67, col. 4 lines 58-61) and the periodic changes are variations in contrast ('085 col. 5 lines 12-28, in which voltages are compared against a predetermined level in order to  
15 determine periodic changes.) The examiner notes that although Munson detects flicker by means of a light sensitive diode and not the photo sensor array, the light from the scene is nonetheless focused onto a photo sensor, as dictated by the claim as currently written.

Regarding claim 12, Hashimoto and Munson teach all the limitations of  
20 claim 10 (see the 103(a) rejection to claim 7 supra) including where the frequency of the artificial illumination is determined by the geographic location of the scene ('085 col. 2 lines 9-37.)

Art Unit: 2612

Munson teaches detection of the frequency of the artificial illumination (col. 4 lines 41-57; col. 6 lines 5-7), in addition to information relating to artificial illumination determined of a geographic location (col. 2 lines 9-37.) Official Notice is taken that the frequency of artificial illumination is calculated as being

5 twice the frequency of the power source; a concept which is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to derive the frequency of the artificial illumination from the frequency of the power source at the location, for use in suppressing the effects of flicker. In light of these teachings, it would have been

10 further obvious to one of ordinary skill in the art at the time the invention was made to determine the frequency of the artificial illumination directly from the associated power source at that geographic location, as a way to reduce processing or as a way to eliminate the need for flicker frequency detection.

Regarding claim 18, Hashimoto is found to teach a method to eliminate

15 the effects of flicker which includes setting an exposure length equal to an integer multiple of the period of the intensity variations in the scene (col. 8 lines 59-65, in which a 1/100 shutter speed is equated with the period of the intensity variations for a 50 Hz power source.) Hashimoto further teaches employing flicker elimination during hill-climbing auto-focusing which includes taking a first

20 exposure with a lens in a first position, moving the lens to a second position, taking a second exposure, and determining which lens position has a better focus measure (Fig. 2A; col. 6 lines 3-36.) However, Hashimoto does not teach

Art Unit: 2612

determining a presence of artificial illumination or a period of intensity variations in the scene.

Nevertheless, Munson is found to teach determining a presence of artificial illumination in the scene, as well as determining of a period of intensity variations in the scene (col. 6 lines 1-7.) It would have been obvious to one of ordinary skill in the art at the time of invention to derive the period of intensity variations from the frequency, due to the direct relation between period and frequency, in order to employ the period of intensity variations in flicker correction. Furthermore, It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate determination of the presence of artificial illumination and the associated period of intensity variations of artificial illumination as taught by Munson, with the auto-focusing method as taught by Hashimoto. One of ordinary skill in the art at the time of invention would be motivated to make this combination in order to eliminate the influence of flicker, and thereby prevent erroneous auto-focus operation.

Regarding claim 19, Hashimoto and Munson teach all the limitations of claim 19 (see the 103(a) rejection to claim 18 supra) including providing a teaching in which the presence and frequency of the artificial illumination is determined by user input.

Munson teaches detection of presence and frequency of the artificial illumination (col. 4 lines 41-57; col. 6 lines 5-7), in addition to information relating to artificial illumination being input by a user (col. 2 lines 9-20.) Official Notice is taken that the frequency of artificial illumination is calculated as being twice the

Art Unit: 2612

frequency of the power source; a concept which is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to derive the frequency of the artificial illumination from the frequency of the power source at the location for use in suppressing the

5 effects of flicker. In light of these teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the presence and frequency of the artificial illumination from the user input of location information, as a way to reduce processing or as a way to eliminate the need for flicker detection. The examiner further notes that the period of artificial  
10 illumination could also be readily determined from the frequency of either the frequency of artificial illumination or the related AC power source; concepts which are is well known and expected in the art.

Regarding claim 20, Hashimoto and Munson teach all the limitations of claim 20 (see the 103(a) rejection to claim 18 supra) including teaching where  
15 the presence and frequency of the artificial illumination is determined by measuring the light from the scene for periodic variations ('085 col. 4 line 58 – col. 5 line 5, in which presence is determined via pulses detected from the measured light; '085 col. 5 lines 58-67, in which frequency is determined via pulses from the measured light.)

20 The examiner further notes that the period of artificial illumination could also be readily determined from the frequency of either the frequency of artificial illumination or the related AC power source; concepts which are is well known and expected in the art.

Regarding claim 21, Hashimoto and Munson teach all the limitations of claim 21 (see the 103(a) rejection to claim 20 supra) including where the periodic changes are variations in brightness ('085 col. 4 line 58 – col. 5 line 5, where the  
5 level of light is equated with brightness.)

Regarding claim 22, Hashimoto and Munson teach all the limitations of claim 22 (see the 103(a) rejection to claim 20 supra) including teaching where the light from the scene is focused onto a photo sensor ('085 col. 3 lines 61-67, col. 4 lines 58-61) and the periodic changes are variations in contrast ('085 col. 5  
10 lines 12-28, in which voltages are compared against a predetermined level in order to determine periodic changes.) The examiner notes that although Munson detects flicker by means of a light sensitive diode and not the photo sensor array, the light from the scene is nonetheless focused onto a photo sensor, as dictated by the claim as currently written.

15 Regarding claim 23, Hashimoto and Munson teach all the limitations of claim 23 (see the 103(a) rejection to claim 20 supra) including where the frequency of the artificial illumination is determined by the geographic location of the scene ('085 col. 2 lines 9-37.)

Munson teaches detection of the frequency of the artificial illumination  
20 (col. 4 lines 41-57; col. 6 lines 5-7), in addition to information relating to artificial illumination determined of a geographic location (col. 2 lines 9-37.) Official Notice is taken that the frequency of artificial illumination is calculated as being twice the frequency of the power source; a concept which is well known and

Art Unit: 2612

expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to derive the frequency of the artificial illumination from the frequency of the power source at the location, for use in suppressing the effects of flicker. In light of these teachings, it would have been

5 further obvious to one of ordinary skill in the art at the time the invention was made to determine the frequency of the artificial illumination directly from the associated power source at that geographic location, as a way to reduce processing or as a way to eliminate the need for flicker frequency detection.

10 **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (US #5,701,526) in view of Inuiya et al. (US #5,905,529), further in view of Smith et al. (US #6,501,518), further in view of Hashimoto (US #6,130,417.)

Regarding claim 13, in the Background of the Invention, Iwasaki teaches a method of detecting artificial illumination in a scene comprising predicting at least

15 one frequency for a variation in the illumination in the scene (fig. 13A; col. 1 lines 44-46, where prediction of the frequency of illumination would be required in order to conduct photometry), measuring light from the scene at a periodic rate, where the periodic rate is different than any of the predicted frequencies, using an exposure length that is different than any of the periods of the predicted

20 frequencies (fig. 13A; col. 1 lines 56-61), as well as discloses the need for calculation of the influence of flicker cycle (col. 1 lines 56-58.)

Inuiya teaches detecting the presence of an artificial illuminant when the measured light from the scene contains periodic changes (col. 12 lines 27-37.) It

Art Unit: 2612

would have been obvious to one of ordinary skill in the art at the time of the invention to include the detection of an artificial illuminant as taught by Inuiya, with the method of detecting artificial illumination as taught by Iwasaki. One of ordinary skill in the art at the time the invention was made would be motivated to

5 make this combination in order to correct effects of flicker, when determined to be present.

Further, Smith teaches use of a Fast Fourier Transform (FFT) analysis of the sampled light to determine the phase and frequency of the periodic changes (in relation to phase: col. 3 lines 23-31, col. 4 lines 23-31; in relation to frequency:

10 col. 4 lines 64-67.) Given the teachings of Smith in relation to the method as taught by Iwasaki and Inuiya, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a FFT to determine the frequency of oscillation of the periodic changes in the measured light, as well as the phase of the changes in relation to the illumination flicker, in order to determine conditions

15 useful in correction of flicker, when detected. However, Neither Iwasaki, Inuiya or Smith teach synchronizing an exposure rate with the frequency of the intensity variations in the scene, or taking a first synchronized exposure with a lens in a first position, moving the lens to a second position, taking a second exposure at the synchronized frequency, then determining which lens position has a better

20 focus measure.

Nevertheless, Hashimoto teaches hill-climbing auto-focusing that determines which lens position has a better focus measure by taking a first exposure with a lens in a first position, moving the lens to a second position and

Art Unit: 2612

taking a second exposure (Fig. 2A; col. 6 lines 3-36.) Hashimoto further teaches these exposures rates being synchronized with the frequency of intensity variations in the scene (col. 8 lines 59-62; (col. 8 lines 59-65, in which the occurrence of shutter activity can be read as occurring in synchronization with the of intensity variations in the scene) in order to eliminate the influence of flicker during focusing (col. 8 lines 47-49.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of flicker detection as taught by Iwasaki, Inuiya and Smith, with the auto-focusing method taught by Hashimoto. One of ordinary skill in the art at the time the invention was made would be motivated to make this combination in order to develop a method of auto-focus that is free from the influence of flicker and does not suffer from false in-focus positions brought about by the variations in illumination.

**Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (US #5,701,526) in view of Ohkawara et al. (US #6,683,652.)

Regarding claim 15, Iwasaki teaches an apparatus adapted to cancel the effects of flicker that includes a means for measuring light from the scene at a periodic rate using a predetermined exposure time (figs. 2 and 3 indicator 9; col. 5 lines 48-55; figs. 7B-7F), and a means for focusing light from a scene (fig. 2 indicator 1.)

Ohkawara is further found to provide the teaching of an apparatus, utilized for auto-focusing of a camera, that provides means for determining the presence

Art Unit: 2612

(col. 15 lines 22-27) and frequency of intensity variations from an artificial illuminant (col. 21 lines 28-29, where determination of frequency is necessary for synchronization) by examining the measured light from the scene for periodic intensity variations (col. 15 lines 58-67.) Ohkawara is also found to teach means  
5 for focusing light from a scene (fig. 1 indicator 127) and means for determining a focus measure for the scene synchronized with the frequency of intensity variations (col. 21 lines 28-34, where the wobbling operation is employed in auto-focusing.) It would have been obvious to one of ordinary skill in the art at the  
10 Ohkawara, in order to create an apparatus that can be employed in conjunction with a camera for the correction of flicker due to artificial illumination during auto-focus operations.

**Claim 4** is also rejected under 35 U.S.C. 103(a) as being unpatentable  
15 over Munson et al. (US #6,295,085) in view of the Background of the Invention provided by the applicant.

Regarding claim 4, Munson is found to teach determining a scene location, in order to correct the effects of flicker generated by fluorescent lighting through first establishing the frequency of the AC power typically used at that  
20 location (col. 2 lines 9-20.) Munson is also found to teach synchronizing an exposure rate with the cycle of oscillation of intensity variations from a fluorescent lamp at the scene (col. 3 lines 33-40.) Official Notice is taken that the frequency of an AC current typically used at a scene location can be readily

Art Unit: 2612

calculated from the cycle of oscillation from a fluorescent lamp at the scene; a concept which is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time of invention to calculate the frequency of the AC current from the cycle of oscillation, for its use in correction of the

5 effects of flicker. Munson, however, does not teach taking a first synchronized exposure with a lens in a first position, moving the lens to a second position, taking a second synchronized exposure, and determining which lens position has a better focus measure.

Nevertheless, the applicant in the Background of the Invention discloses

10 the prior state of the art, which includes an auto focus algorithm that typically takes multiple exposures of a scene with the lens in different positions, and then selects the lens position corresponding to the exposure with the highest contrast to determine proper focus (p. 5 lines 5-10.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to determination of a

15 scene location and synchronization of an exposure rate for the purpose of correcting the effects of flicker during photography as taught by Munson, with the method of auto-focusing as taught in the Background of the Invention. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teaching in order to create a method of auto-focus, eliminates

20 flicker related to fluorescent lighting during focusing operations, and which is adjustable for use based on the particular AC power source at that location (e.g. 50 Hz or 60 Hz.)

***Allowable Subject Matter***

**Claims 14, 16 and 17** are allowed.

Regarding claim 14, the prior art is not found to teach or fairly suggest, in combination with the existing elements of the present claim, measuring light from the scene at a periodic rate using a first exposure length that is equal to the period of the predicted frequency, re-measuring light from the scene at a periodic rate using a second exposure length that is equal to the period of a second predicted frequency, and determining the presence and frequency of the variation in the illumination in the scene when the variability of the measurements using the first exposure length is different than the variability of the measurements using the second exposure length.

Regarding claim 16, the prior art is not found to teach or fairly suggest, in combination with the existing elements of the present claim, a processor configured to not only determine the frequency of intensity variations in the illumination of the scene by examining the measured light from the scene for periodic contrast variations, but also configured to synchronize at least two exposure, used in an auto-focus control, to the intensity variations in the scene.

Regarding claim 17, the instant claim is allowed based on its dependence on allowable subject matter.

Art Unit: 2612

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haruki (US #5,430,483) discloses automatic focusing in conjunction with  
5 flicker detection.

Saito et al. (US#5,319,449) discloses various exposure rates in relation to flicker frequencies.

***Contact***

10 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary C. Vieaux whose telephone number is 703-305-9573. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the  
15 examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

- 5 Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary C. Vieaux  
Examiner  
Art Unit 2612

10

Gcv2

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600